Northampton Urban Sanitary Authority.

ANNUAL REPORT

(TWENTY THIRD)

ON

THE HEALTH

OF THE

County Borough of Northampton,

FOR THE YEAR ENDING DECEMBER 31st, 1898,

BY

LEE F. COGAN, M.R.C.S.,

MEDICAL OFFICER OF HEALTH.

NORTHAMPTON:
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—
1899.

To the Mayor and Town Council of the County Borough of Northampton.

Gentlemen,

I beg to submit my annual report (twenty-third) on the state of the public health in Northampton for the year 1898. It is not satisfactory to record that, as in 1897, the prevalence of epidemic scarlet fever was excessive, and a persisting disturbing factor in the healthfulness of the community. We had also to contend with an outbreak of measles, though fortunately only of limited proportions in its incidence of attack.

The abnormal meteorological conditions experienced in the summer months of last year exercised unfavourable influences on the health of the population, the intensely hot weather, and small rainfall, favouring the development of zymotic diarrhœa, and occasioning an infantile fatality higher than that inflicted by this particular disease for some years past.

With these exceptions the past year was uneventful.

The vital statistical records for the year are, however, by no means open to adverse comment, for the mortality rates, both zymotic and general, were lower than in the two preceding years 1896 and 1897.

I am, Gentlemen,
Yours obediently,
LEE F. COGAN,
Medical Officer of Health.

Northampton, February, 1899.

SUMMARY OF STATISTICS, 1898.

POPULATION (estimated) 67,414

INHABITED HOUSES 12,661

DENSITY OF POPULATION, 44·3 persons per acre.

RATEABLE VALUE, £220,606. 11s. 4d.

BIRTHS

MALES.	FEMALES.	TOTAL.	BIRTH RATE.
890	804	1694	25·1

DEATHS.

MALES.	FEMALES.	TOTAL.	DEATH RATE.
551	444	995	14·7

Zymotic Death Rate, 2·0.

Infantile Mortality Rate, 181·2 per 1,000 Births.

DEATHS FOR THE QUARTERS.

	1897.	1898.		1897.	1898.
First Quarter	299	248	Third Quarter	252	271
Second Quarter ...	243	204	Fourth Quarter ...	248	272

REPORT.

POPULATION.—The total number of persons estimated to be living in the County Borough of Northampton in the middle of the year 1898 was 67,414. This estimate is approximate only, the actual population being ascertainable only in census years. It is based on the assumption that the annual growth of the population has continued at the same ratio since the census of 1891 as in the preceding intercensal period.

The accuracy of the estimate of the population is of great importance in the computation of statistics.

However, if any inaccuracy exists I believe the population will be found under rather than over-estimated.

To guide us, both the natural growth of the population exhibited by the preponderance of births over deaths, and also the yearly increase in the number of inhabited houses, are factors of value in arriving at a correct estimate.

I have ascertained that in the month of June, 1898, the number of inhabited houses in the County Borough was 12,661, being 55 in excess of the number in the previous year.

Parish.	Number of Inhabited Houses.
St. Giles	4,900
St. Sepulchre	3,740
St. Andrew	1,884
All Saints	1,824
St. Peter	313
Total	12,661

The excess of births over deaths was 699, indicating the natural increase of the population for the past year, a diminution of 11 compared with the natural increase in 1897.

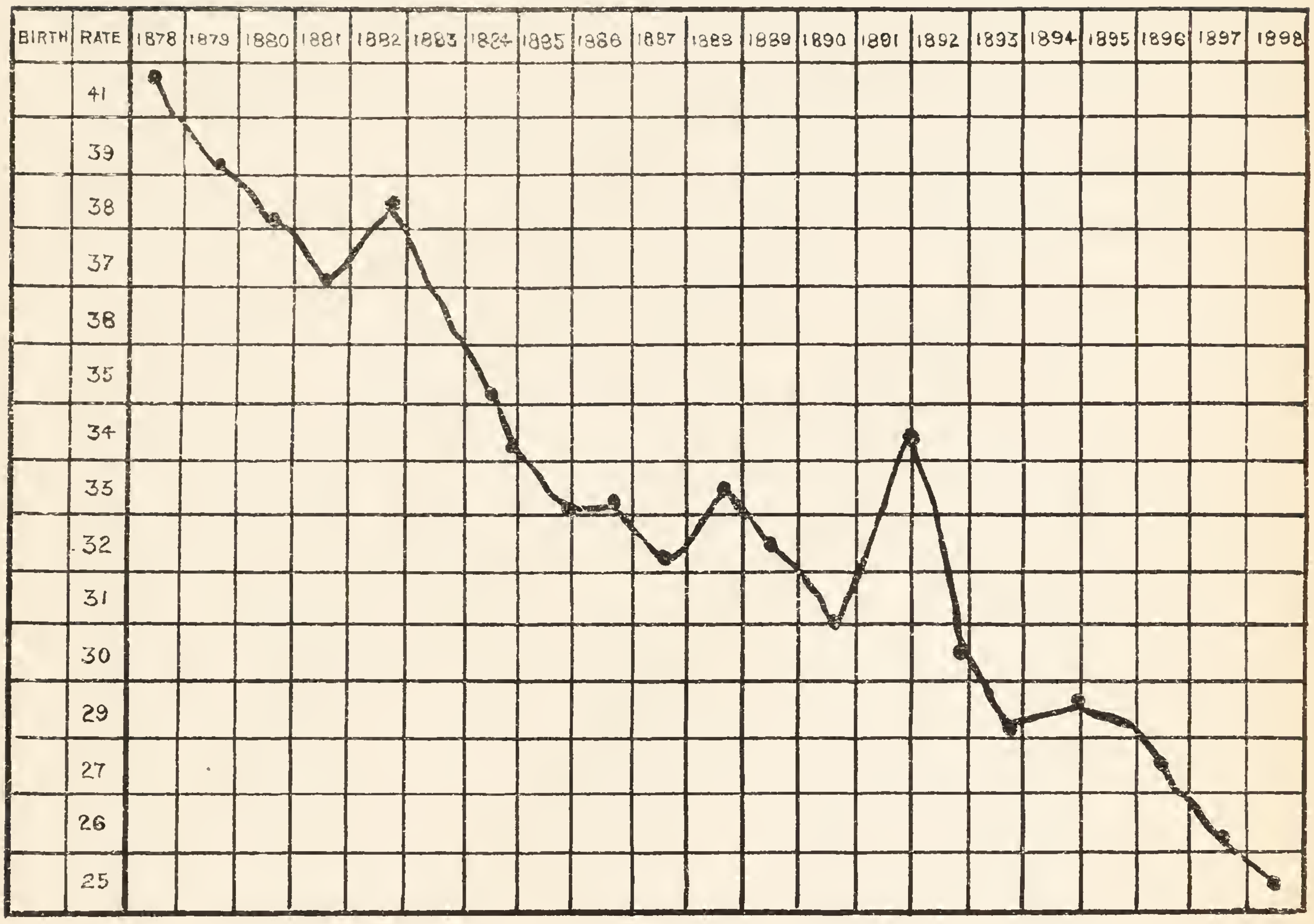
BIRTH RATE.—A still declining birth-rate has to be recorded for the year 1898. The total number of births amounted to 1,694, equal to a birth-rate for the year of 25·1 per 1,000 persons living, and less by 1·2 per 1,000 than the rate of the previous year. Of the children born in 1898, 890 were males and 804 females.

In the registration district of St. Giles, 1,402 births were registered, and in All Saints 292.

ANNUAL BIRTH RATE.

NORTHAMPTON.

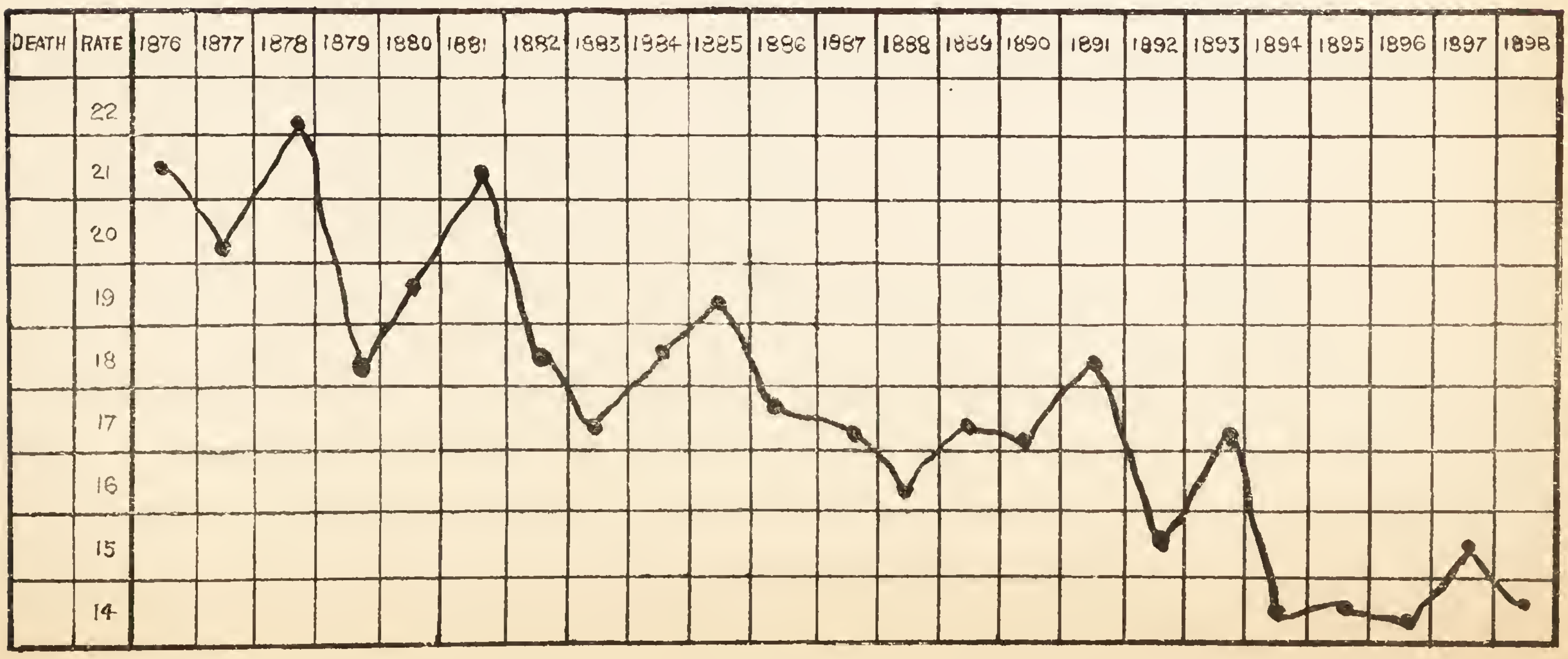
1878–1898.



ANNUAL DEATH RATE

NORTHAMPTON.

1876 – 1897.



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The proportion of illegitimate births to legitimate was 3·8 per cent., against 3.5 in the preceding year. There were 65 of such births registered, as against 63 in 1897.

The birth-rate for last year is the lowest recorded in any year since 1878. The average birth-rate in Northampton for the ten years 1889–1898 was 29·6 per 1,000.

The birth-rate in England and Wales in 1898 was 29·4 per 1,000 of the population, which is lower than that in any other year on record; compared with the average in the ten years 1888–1897, the birth-rate in 1898 shows a decrease of 1·1 per 1,000. (Registrar-General.)

Table showing the Infant Mortality Rates for the years 1878 to 1898, with the Birth Rate for the same years.

Year.	Birth Rate per 1,000 of the Population.	Deaths of Children per 1000 Births.
1878	41·3	188·4
1879	39·16	139·67
1880	38·6	149·59
1881	37·18	150·3
1882	38·0	161·8
1883	36·0	132·2
1884	35·18	186·26
1885	33·6	155·1
1886	33·9	153·5
1887	32·4	174·8
1888	33·5	146·3
1889	32·9	176·4
1890	31·7	174·7
1891	34·5	164·2
1892	30·19	145·4
1893	29·23	173·1
1894	29·03	136·1
1895	29·7	145·8
1896	27·4	150·6
1897	26·3	184·3
1898	25·1	181·2

NOTE.—Average birth-rate per 1,000 for the years 1889–1898, 29·6.

Average death-rate of children under one year per 1,000 births for 10 years 1889–1898, 163·1.

DEATHS.—Eliminating the deaths that occurred in the public institutions within the urban sanitary district of persons not belonging to Northampton, and including the deaths at the Borough Hospital, Kingsthorpe, of patients removed there from the town, the corrected mortality for the year 1898 amounted to 995. There were 90 deaths of non-residents returned as taking place in the public institutions as follows :—Northampton Infirmary, 58 ; St. Andrew's Hospital, 19 ; Union Workhouse, 13.

The mortality rate for the year was equal to 14·7 per 1,000 persons living, being 0·9 per 1,000 less than the rate of 1898 (15·6), and 1·3 per 1,000 below the annual average death rate of ten years 1889-98.

Of the deaths 551 belonged to the male sex and 444 were females.

In the registration district of St. Giles there were registered 814 deaths, and in All Saints 173.

The annual average rate for the ten years 1889–1898 was 16·03 per 1,000.

The death-rate in England and Wales in 1898 was 17·6 per 1,000, which is lower than the rate in any previous year excepting 1894, 1896, and 1897. Compared with the average in the ten years 1888-97 the death-rate in 1898 shows a decrease of 0·8 per 1,000. (Registrar-General.)

ANNUAL DEATH-RATE FROM ALL CAUSES DURING THE YEAR 1898.

England and Wales	17·6
33 Great Towns	19·0
67 other Large Towns	17·2
England and Wales Less the 100 other Towns	16·7

(Registrar-General).

Table showing the Comparative Mortality of Northampton with 19 other Towns.

TOWN.	1898.				Infant Mortality Deaths under 1 year per 1,000 Births.	Average Death Rate, 10 years, 1889 to 1898.
	Population.	Birth Rate.	Death Rate.	Zymotic Death Rate.		
Huddersfield ...	102,454	22·48	15·91	1·51	153	17·84
Aston Manor ...	80,016	31·6	15·1	2·9	186·3	16·1
Bath	52,600	19·07	16·27	1·43	136	18·56
Derby	104,834	27·28	16·75	2·2	164	17·1
Wolverhampton ...	88,051	35·7	21·0	3·7	202	21·37
Reading	69,477	26·64	14·59	1·63	153·4	15·11
Southampton ...	103,168	28·5	16·5	2·5	153	17·8
Coventry	62,459	30·6	16·8	2·9	—	17·4
Burton-on-Trent ...	51,664	28·30	14·81	1·92	142	16·80
West Bromwich ...	63,500	35·7	19·1	3·1	182	—
Halifax	96,729	22·7	17·8	2·1	167	18·9
Wigan	61,697	34·49	18·88	2·45	170	22·69
Southport	49,678	19·71	14·49	0·81	138	16·79
Hanley	60,274	34·4	19·8	2·7	223	20·1
Cheltenham ...	49,000	22·2	16·4	1·0	146	16·7
Stockport	81,000	29·4	20·3	4·0	231	22·9
Warrington ...	62,770	37·5	17·8	3·2	169	21·4
Northampton ...	**67,414**	**25·1**	**14·7**	**2·0**	**181·2**	**16·0**
Bury	60,579	24·48	17·82	2·70	—	22.01
Ashton-under-Lyne	44,700	26·5	19·1	1·7	195·3	22·1

UNCERTIFIED DEATHS.—The number of uncertified deaths registered in 1898 was 31, the percentage to the total mortality being 3·1.

CANCER AND OTHER MALIGNANT AFFECTIONS.—The tendency in Northampton of the mortality rate from this malignant class of diseases is apparently for the time being a decreasing one In 1898 the total number of deaths assigned to cancer and allied diseases was 32, equal to a death-rate of 0·47 persons living, the corresponding death-rate in the two previous years being 0·77 per 1,000 and 0·60 per 1,000 respectively.

INFLUENZA.—The mortality assignable to this cause was comparatively insignificant, only 17 deaths being recorded as directly due to it. In the previous year 14 persons died of influenza. It is, however, evident that this disease is lurking in our midst, and that we have not yet heard the last of influenza.

TUBERCULAR DISEASES.—Comprised in this group are phthisis, pulmonalis, tubercular peritonitis, hydrocephalus, and tabes mesenterica. These diseases occasioned 130 deaths in Northampton in 1898, 114 of this number being due to phthisis pulmonalis.

The consumptive death-rate was equal to 1·70 per 1,000 persons living, against a rate of 1·21 per 1,000 in the previous year, an excess of 0·49 per 1,000, a substantial increment which it is to be hoped will not be continued in the future.

In the course of last year by my direction about 66 houses in which persons died of consumption were inspected by the officers of the health department, and the rooms occupied by the patients, as well as the contents, were subjected to a process of complete disinfection.

THE PREVENTION OF TUBERCULOSIS.—The knowledge that 40,000 persons die each year in this country of affections belonging to this particular class of diseases, the greater proportion of whom is constituted of young adults, is a state of affairs that can only be regarded with extreme gravity, and calling for the most serious attention. That the question of the prevention and repression of a disease that inflicts this enormous destruction of human life is at the present period engrossing the attention of those engaged in the profession of medicine, combined with some portion of the general public, indicates that a long-existing national evil, or rather calamity, is being confronted with the object of its mitigation.

This action no doubt will receive popular endorsement. The promotion of precautionary measures for the prevention and eradication of tubercular diseases is an obligation devolving on sanitary authorities, and there are no grounds for apprehending the existence of any disposition on the part of these bodies to shirk their responsibilities in a matter of this vital importance.

A proposition has been advanced in some quarters advocating the inclusion of tuberculous diseases in the list of notifiable diseases, but I conceive that in the present state of public opinion there is but little doubt that a coercive procedure of this sort would be met by most strenuous opposition. I have no hesitation in saying that I should have no reluctance in joining the ranks of the opponents of such a scheme, the desirability and utility of which are extremely dubious. The compulsory notification of this disease is a question that, at any rate for the time being, may be allowed to remain in abeyance.

The voluntary notification of consumption, however, is a subject well worth consideration, if not encouragement.

The essential point in the prevention of tuberculosis is the education of the people. The public must be taught that consumption, to a certain extent, is a communicable and infectious disease, and that it is preventible; and the means that must be resorted to for its prevention. In my annual report for the year 1896, in alluding to this subject, I suggested the distribution amongst the inhabitants of the district leaflets containing advice on this matter, and I would take this opportunity of again urging that this measure should be sanctioned by the Town Council.

Apart, however, from popular education, the prevention of tuberculosis involves other and more intricate questions, allied to preventive medicine, falling within the scope of sanitation.

Before proceeding further, I should remind you that tuberculosis is caused by a microscopic organism, the tubercle bacillus, which was discovered by Koch some few years since.

This microbe is capable of transmission from one human being to another, and it can also be conveyed from the bovine species to man, through the agency of the milk and flesh of these animals, but more especially the mammary secretion.

The expediency is unquestionable that administrative procedures should be inaugurated for stamping out animal tuberculosis, and also the prevention of the contamination of milk with the infective bacilli.

Local authorities should be endowed with extensive powers for the regulation and control of both milk and meat supplies, and legislative action, imperial and local, must be set in motion for the attainment of this object. It may be anticipated that administrative action clashing with commercial interests will be to some extent resisted by the traders implicated, but private enterprise cannot and will not be permitted to obstruct the introduction of measures for protecting the public health.

The Royal Commission appointed to inquire into the "Administrative Proceedings for Controlling Danger to Man through the Use as Food of the Meat and Milk of Tuberculous Animals" in their report issued last year have submitted a series of recommendations dealing with the subject, which I have thought advisable to quote here in extenso. The report most definitely indicates the line of action to be taken in conducting administrative operations for the prevention of the diffusion of tuberculosis, and there is every reason for arriving at the conclusion that the suggestion of the Commissioners will in the near future be universally adopted throughout the country:—

MEAT.

A.—Slaughter-houses.

1. We recommend that in all towns and municipal boroughs in England and Wales, and in Ireland, powers be conferred on the authorities similar to those conferred on Scottish corporations and municipalities by the Burgh Police (Scotland) Act, 1892, viz.:—

(*a*) When the local authority in any town or urban district in England and Wales and Ireland have provided a public slaughter-house power be conferred on them to declare that no other place within the town or borough shall be used for slaughtering, except that a period of *three* years be allowed to the owners of existing registered private slaughter-houses to apply their premises to other purposes. The term of *three* years to date, in those places where adequate public slaughter-houses already exist, from the public announcement by the local authority that the use of such public slaughter-houses is obligatory, or, in those places where public slaughter-houses have not been erected, from the public announcement by the local authority that tenders for their erection have been accepted.

(*b*) That local authorities be empowered to require all meat slaughtered elsewhere than in a public slaughter-house, and brought into the district for sale, to be taken to a place or places where such meat may be inspected; and that local authorities be empowered to make a charge to cover the reasonable expenses attendant on such inspection.

(*c*) That when a public slaughter-house has been established inspectors shall be engaged to inspect all animals immediately after slaughter, and stamp the joints of all carcases passed as sound.

2. It appears desirable that in London the provision of public in substitution for private slaughter-houses should be considered in respect to the needs of London as a whole, and in determining their positions regard must be had for the convenient conveyance of animals by railway from the markets beyond the limits of London, as well as from the Islington market, to the public slaughter-houses which should be provided. At the present time no administrative authority has statutory power authorising it to provide public slaughter-houses other than for the slaughter of foreign cattle at the port of debarcation.

3. With regard to slaughter-houses in rural districts, the case is not so easy to deal with. But the difficulty is one that must be faced, otherwise there will be a dangerous tendency to send unwholesome animals to be slaughtered and sold in small villages where they will escape inspection. We recommend, therefore, that in Great Britain the inspection of meat in rural districts be administered by the county councils. In Ireland the duty of carrying out inspection ought to devolve upon authorities corresponding as nearly as possible to those charged with that duty in England and Scotland. In view of the announced intention of the Government to introduce a new scheme of local government into Ireland we refrain from specifying the exact machinery which should be employed.

4. We recommend further that it shall not be lawful to offer for sale the meat of any animal which has not been killed in a duly licensed slaughter-house.

B.—QUALIFICATIONS OF MEAT INSPECTORS.

5. We recommend that in future no person be permitted to act as a meat inspector until he has passed a qualifying examination, before such authority as may be prescribed by the Local Government Board (or Board of Agriculture), on the following subjects:—

(*a*) The law of meat inspection, and such bye-laws, regulations, &c., as may be in force at the time he presents himself for examination.

(*b*) The names and situations of the organs of the body.

(*c*) Signs of health and disease in animals destined for food, both when alive and after slaughter.

(*d*) The appearance and character of fresh meat, organs, fat, and blood, and the conditions rendering them, or preparations from them, fit or unfit for human food.

C.—Tuberculosis in Animals Intended for Food.

6. We recommend that the Local Government Board be empowered to issue instructions from time to time for the guidance of meat inspectors, prescribing the degree of tubercular disease which, in the opinion of the Board, should cause a carcase, or part thereof, to be seized.

Pending the issue of such instructions we are of opinion that the following principles should be observed in the inspection of tuberculous carcases of cattle :—

(*a*) When there is miliary tuberculosis of both lungs. (*b*) When tuberculous lesions are present on the pleura and peritoneum. (*c*) When tuberculous lesions are present in the muscular system, or in the lymphatic glands embedded in or between the muscles. (*d*) When tuberculous lesions exist in any part of an emaciated carcase.	The entire carcase and all the organs may be seized.
(*a*) When the lesions are confined to the lungs and the thoracic lymphatic glands. (*b*) When the lesions are confined to the liver. (*c*) When the lesions are confined to the pharyngeal lymphatic glands. (*d*) When the lesions are confined to any combination of the foregoing, but are collectively small in extent.	The carcase, if otherwise healthy, shall not be condemned, but every part of it containing tuberculous lesions shall be seized.

In view of the greater tendency to generalisation of tuberculosis in the pig, we consider that the presence of tubercular deposit in any degree should involve seizure of the whole carcase and of the organs.

In respect of foreign dead meat, seizure shall ensue in every case where the pleura have been " stripped."

MILK.

D.—Diseases in the Udders of Cows.

7.—We recommend that notification of every disease in the udder shall be made compulsory, under penalty, on the owners of all cows, whether in private dairies or those of which the milk is offered for sale.

8. We recommend that for the purpose of excluding from their districts the milk of cows affected with tuberculosis of the udder, or exhibiting clinical symptoms of the disease, local authorities should be given powers somewhat similar to those of sections 24–27 of the Glasgow Police (Amendment) Act, with power to slaughter such cows subject to compensation under the conditions named in the Report.

9. We also recommend that powers shall be given to local authorities to take samples and make analyses from time to time of the milk produced or sold in their districts, and that milk vendors shall be required to supply sufficient information as to the sources from which their milk is derived.

At ports where milk and milk products are received from foreign countries, any costs that may be thus incurred in their examination shall be borne by the importers.

E.—Cowsheds, Byres, &c.

10. We recommend that the Local Government Board be empowered to require local authorities to adopt regulations as to dairies, cowsheds, &c., where that shall be found not to have been done already.

11. That in future no cowshed, byre, or shippon, other than those already registered, shall be permitted or registered in urban districts within 100 feet of any dwelling-house ; and that the discontinuance of any one already existing shall be ordered on the certificate, either of the medical officer of health that it is injurious to the health of human beings residing near it, or of the veterinary inspector that it is not a place wherein cows ought to be kept for the purpose of milk supply, and that it is incapable of being made so.

12. That the conditions of the attached cowsheds that shall warrant the registering of a dairy in a populous place, whether technically urban or rural, in the future shall include the following :—

1. An impervious floor.
2. A sufficient water supply for flushing.
3. Proper drainage.
4. A depôt for the manure at a sufficient distance from the byres.
5. A minimum cubic contents as regards such districts of from 600 to 800 feet for each adult beast, varying according to the average weight of the animals.
6. A minimum floor space of 50 feet to each adult beast.
7. Sufficient light and ventilation.

While we have prescribed a minimum cubic contents and floor space without mentioning definite dimensions affecting ventilation and lighting, we are distinctly of opinion that these are by far the most important, and that requirements as to cubic and floor space are mainly of value as tending to facilitate adequate movement of air.

Existing cowsheds should be obliged to conform to the prescribed regulations within a period of twelve months from the time of the regulations coming into force.

13. The same conditions as those recommended for populous places should apply to cowsheds in sparsely populated places, except in so far as cubic contents per cow are concerned; as regards these cubic contents, such space per cow should be provided as would, in view of the surrounding circumstances, secure reasonable ventilation without draught. But the physical circumstances prevailing in different localities being so various, we do not find it practicable to prescribe uniform minimum requirements in this respect.

14. We recommend that where cows housed in one district supply milk to another district, the local authority of the district in which the cows are housed shall be bound, when required, to supply to the local authority of the district in which the milk is sold or consumed full information and veterinary reports regarding the condition of the cows, byres, &c., whence the milk is drawn. Where the local authority of one district are dissatisfied with the reports so obtained, they may apply to the Local Government Board, with a view to an independent inspection and report being made.

F.—ELIMINATION OF BOVINE TUBERCULOSIS.

15. We recommend that funds be placed at the disposal of the Board of Agriculture in England and Scotland, and of the Veterinary Department of the Privy Council in Ireland, for the preparation of commercial tuberculin, and that stockowners be encouraged to test their animals by the offer of a gratuitous supply of tuberculin and the gratuitous services of a veterinary surgeon on certain conditions.

These conditions shall be—

(*a.*) That the test be applied by a veterinary surgeon.

(*b.*) That tuberculin be supplied only to such owners as will undertake to isolate reacting animals from healthy ones.

(*c.*) That the stock to be tested shall be kept under satisfactory sanitary conditions, and more especially that sufficient air space, ventilation, and light be provided in the buildings occupied by the animals.

16. We recommend that the Board of Agriculture in England and Scotland and the Veterinary Department of the Privy Council in Ireland undertake the circulation among agricultural societies of instructions for the proper use of the tuberculin test, with explanation of the significance of reaction, and directions for effective isolation of reacting animals."

In connection with this subject, the curative treatment of consumption must be considered, as well as the preventive, and the question of providing suitable places for treating phthisical patients in accordance with modern views is one demanding very serious reflection.

It should be clearly understood that in the application of remedial measures for the suppression of tuberculosis the essential details for observance in connection with domestic hygiene are—

(1) That milk should invariably be boiled before being consumed.

(2) Meat should be thoroughly cooked before being eaten.

(3) The pulmonary secretion of consumptive patients, containing the infective tubercle bacillus, should be destroyed by powerful disinfection, and burning, and not indiscriminately disposed of.

The intimate relation that exists between tuberculosis and insanitation necessitates the imperativeness of all those inhygienic conditions whose presence is so common in most crowded districts being removed. Unwholesome and unhealthy dwellings, engendered by overcrowding, inadequate air and light, dampness, &c., must be effectively dealt with. No efforts should be spared in the application of measures for abolishing specimens of insanitation of this dangerous character.

INFANT MORTALITY.—The deaths of 307 children under one year were registered during the year, the proportion to 1,000 births being represented by a rate of 181·2, against 184·3 in 1897. In England and Wales the rate of mortality among infants under one year to 1,000 registered births was 161, which was 12 per 1,000 above the mean proportion in the ten years 1888–1897. (Registrar-General.)

That infants in Northampton in the year 1898 perished at a ratio of 20·2 per 1,000 in excess of the mean rate of the whole country is a statistical feature that cannot be contemplated with anything approaching complacency. In comparing the infantile death-rate of Northampton with that of other selected manufacturing districts, we find that our position is a prominent one, as being included in the list of those towns with excessive death-rates. The causes of this unsatisfactory state of things are readily accounted for, but their removal is a question attended with almost insuperable obstacles. That the lives of many children are sacrificed owing to the want of adequate care and nursing and appropriate feeding, is common knowledge, but there are other factors involved which are not comprised within the sphere of practical sanitation for effecting reforms. The preservation of infant life is an extremely intricate social question; it is not to be attained solely by popularising education in nursery hygiene, and it is extremely doubtful if state intervention would be anything but powerless in devising measures excercising influences substantially beneficial for the protection of infant life. This view may be looked upon as needlessly gloomy, but it is based on a somewhat extensive experience in this debatable question of state medicine.

The number of deaths from infants under one year of age from certain groups of diseases are given below:—

Zymotic diseases	81
Tubercular ,,	21
Pulmonary ,, (other than phthisis)	27
Wasting ,,	70
Convulsive ,,	25

It should be observed that no inconsiderable proportion of the infantile mortality for the year 1898 is assignable to premature birth, there being no less than 56 deaths certified as arising from this cause.

SPECIFIC FEBRILE OR ZYMOTIC DISEASES—Included in this class are small-pox, measles, scarlet fever, diarrhœa, diphtheria, whooping cough, typhoid fever. The aggregate deaths from these diseases amounted to 137, and giving a zymotic death-rate of 2·0 per 1,000, as against 2·4 in the preceding year, a decrease of ·4. The zymotic death-rate of last year is but ·1 above the average rate for the ten years 1889–1898.

The deaths of patients in the Borough Hospital at Kingsthorpe belonging to the district have been included in these figures.

The zymotic death-rate of England and Wales in 1898 corresponded to a rate of 2·22 per 1,000 living, against 2·21 and 2.17 respectively in the two preceding years. (Registrar-General.)

SMALL-POX.—No case of small-pox occurred in the county borough of Northampton during 1898.

Owing to the intervention of the Local Government Board, it has been determined to make fresh arrangements in the way of hospital provision for small-pox patients.

The sanitary committee, by the authority of the town council, have taken the matter in hand, but as yet it has not proceeded very far, a suitable site not having been secured.

With regard to the vaccination question, I have only a very few remarks to make. Northampton is, I believe, one of the worst vaccinated towns in the kingdom, and "conscientious objectors" are to be numbered by thousands, and the people will not have vaccination at any price. With the present state of public opinion, anti-vaccination views now largely preponderating amongst the community, practical results are not likely to be obtained by attempting to convince the public that in abandoning vaccination it is adopting a policy nothing short of suicidal. Future events, however, in all probability will demonstrate conclusively that the antagonism to this unquestionably powerful preventive operation is calculated to jeopardise the public health to an extent that cannot now be estimated, or that is sufficiently realised by those who so persistently and strenuously advocate the tenets of anti-vaccinationists.

Those, however, who may be open to conviction on this question may be reminded that the Royal Commission on Vaccination, after several years' deliberation, in summarizing the evidence as to whether vaccination has any protective influence in relation to small-pox, states:—"It does appear to us impossible to resist the conclusion that vaccination has a protective effect relative to small-pox." "We can see nothing to warrant the conclusion that in this country vaccination might safely be abandoned, and replaced by a system of isolation."

MEASLES.—There were 33 deaths registered from measles, whilst there were only two attributed to this cause in the previous year, the death-rate for 1898 being equal to 0·48 persons living. The infected rooms and contents in all dwellings in which fatal cases of measles occurred were disinfected by officers connected with the health department.

There were about 542 cases of measles reported to the department and investigated in the course of the year, the infected houses being visited, and both verbal and printed instructions given with reference to the precautions to be observed for averting the extension of this infection.

The existence of the greater number of these cases was reported by the teachers of the public elementary schools in the town attended by the infected children, and I must not omit expressing my obligations to the teachers of these schools for the assistance afforded by them in detecting the prevalence of this particular non-notifiable affection and other infectious disorders attacking the scholars of their respective schools. The system of weekly notification by school teachers of infectious and suspected infectious illness amongst school children, which by the sanction of the town council and school authorities has been carried out for the last two years, affords most material aid to the officer of health in bringing to light a very significant amount of infectious sickness which otherwise would not come under his cognizance.

I must also state that the undermentioned elementary schools were at my suggestion required to be closed last year under article 88 of the Education Code owing to the excessive prevalence of measles amongst the children :—

St. Katharine's Infant School……	May 4th…	5	weeks
Military road „ ……	June 11th…	6	„
St. Andrew's „ ……	June 11th…	6	„
St Mary's (Lower Mounts) Infant School …………………………	June 14th…	6	„
Spring Lane Infant School ……	June 15th…	6	„
All Saints „ ……	June 29th…	6	„
Stimpson Avenue „ ……	Sept. 8th…	6	„
Vernon Terrace „ ……	Sept. 22nd…	3	„
St. Edmund's „ ……	Nov. 5th…	6	„

There is no doubt whatever that the closure of schools in measles-infected districts is a precautionary proceeding that is most effective in restraining the progress of measles infection and tending to localize the activity of the epidemic, and its eradication.

In all instances referred to, the requisitions for the closure of schools delivered to the managers of the infected schools were invariably promptly complied with.

SCARLET FEVER.—It is with some regret that I am not enabled to record a more complete subsidence in the epidemic prevalence of this specific fever compared with the preceding year; however, the returns show a diminution, though not so substantial as desired.

There were last year 731 cases of scarlet fever notified to the health department, against 866 in the previous year, indicating a decline in the number by 135. The attack rate of scarlet fever for the year is equal to 10·7 per 1,000, against 13·0 the corresponding rate in the previous twelve months. Females suffered more severely than males, there being 339 of the latter and 392 of the former.

With reference to age, children of ages ranging between 5 and 10 years were most commonly attacked, next those in the first quinquennial period of life. Infants under a year old rarely suffer from this febrile affection.

Age Incidence of Scarlet Fever, 1898.

Under 1 year.	1 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.
2	197	274	156	57	29	10	5	0	1

The scarlet fever death-rate was 0·22 per 1,000, as against 0·61 per 1,000 in 1897, the deaths amounting to 15 last year and to 41 in 1897.

The proportion of scarlet fever infected patients isolated at the Borough Hospital, Kingsthorpe, was 43·1 per cent., the percentage of isolated cases in 1896 and 1897 being 68·7 per cent. and 49·8 per cent. respectively.

The precautionary proceedings resorted to for preventing the extension of scarlet fever infection, consisted in the isolation of the infected persons by removal to the hospital, or in their own homes where practicable: disinfection of infected rooms, and all articles of every description exposed to infection; the prohibition of children living in infected houses attending school.

Persons coming in contact with infected persons were invariably warned of the dangers incurred by association with other people, and goods were prevented being sent to infected houses for manufacture.

Northampton has for several years past suffered from an excessive prevalence of this fever, so much so, that the conclusion is forced upon us that it has become endemic, and that repressive measures are powerless in effecting its eradication from amongst the population. The form assumed by the fever in its epidemic prevalence during the last two or three years has been of a mild and modified type, and the low rate of mortality inflicted by this cause is a feature which should afford encouragement in the continuation of energetic measures for its extinction.

During the year I had brought to my knowledge some cases of exposure of persons attacked with this infection. I, however, on investigation, satisfied myself that the occurrences were due to accident or ignorance rather than design, and no further action under these circumstances would of course have been justifiable.

TYPHOID FEVER.—The returns indicate an increase in the incidence of this fever in comparison with the preceding year, there being 36 cases reported in 1898 against 26 in the preceding year. The analysis of the cases, however, reveals the fact that the increase of this specific fever was only very slightly in excess of that of 1897, for we find that of the typhoid cases, five were imported from country districts and treated in the Northampton Infirmary, and one of the reported cases, I am in a position to state, was of a very doubtful nature. This reduces the actual number of typhoid cases occurring last year to 30, against 28 in 1897. The typhoid mortality is represented by a rate of 0·05 per 1,000, against 0·10 in 1897. Seventeen, more than 50 per cent., of the typhoid patients belonging to the County Borough, were removed for treatment to the Borough Hospital at Kingsthorpe.

The annual average number of deaths from typhoid fever during the decade 1889—1898, was 4·5.

The localities in which typhoid fever cases occurred in 1898, were—

LOCALITY.	CASES.
Bristol street	2
Bath street	3
Swan street	1
Bailiff street	1
Adnitt's place	1
Lower Priory street	1
Lower Hester street	2
Colwyn road	1
Grafton street	1
3 Square, Nelson street	1
St. Andrew's street	1
Lower Grafton street	3
Compton street	1
Infirmary	5
Lower Cross street	2
Bearward street	1
Silver street	1
Cloutsham street	1
3 Court, Castle street	1
Scarletwell street	3
Lady's lane	1
Alfred street	1
Horsemarket	1
Total	36

Outbreaks of typhoid almost unexceptionally are restricted to the older parts of the district, to those localities in which insanitary conditions exist favouring the development of this particular zymotic disorder.

In a large proportion of the typhoid-infected houses defects in sanitation were found, and measures undertaken for the amendment of the same. In two instances reconstruction of the entire drainage system of the houses in accord with the bye-laws was found requisite and required to be carried out.

I should state that every possible care is observed by the health department in all cases of typhoid fever reported, for ensuring the observance of precautions calculated to lessen the risk of the extension of the infection and its recurrence.

DIPHTHERIA.—In the course of last year there were 16 cases of diphtheria notified to the medical officer of health against 8 in the preceding year.

There were two fatal cases of this specific febrile disease registered, being one more than in 1897.

It is a fortunate circumstance that this extremely dangerous complaint is, comparatively speaking, uncommon in Northampton.

The tendency to determine off hand the diagnosis of throat affections attended by ulcerative inflammation, solely, by clinical observation, without confirmation by bacteriological investigation, so far as we are locally concerned, I believe results in diagnostic inaccuracies, which it is necessary to avoid, if possible.

Four of the diphtheritic cases were transferred to the Hospital at Kingsthorpe, one terminating fatally.

WHOOPING COUGH.—This is a very common and particularly infectious malady of childhood, and its dangers are not sufficiently realized by the public ; and there is no doubt that the lives of a considerable number of children are sacrificed from ignorance of the true nature of whooping cough. This is a disease requiring careful medical treatment and nursing, which medical practitioners are enabled to affirm is too frequently neglected. The record of last year with regard to whooping cough, however, is favourable, the mortality rate being 0·17 per 1,000, as against 0·94 in the preceding year. The total number of deaths attributable to this cause was 12, whereas in 1897 it was 63, a marked decline.

DIARRHŒA.—The number of deaths ascribed to this cause was 71, the death rate being 1·05 per 1,000, as against 0·75 in the previous year.

The death-rate for England and Wales in the same year was equal to a rate of 2·85 per 1,000, or 1·21 above the average rate of mortality in the previous year. (Registrar-General).

Epidemic diarrhœa is not entirely a controllable affection, for there is ample evidence available proving that heat is the exciting factor in the production of this fatal disorder of childhood belonging to the zymotic group. The investigations of the late Dr. Ballard as to the causation of diarrhœa furnish most valuable etiological facts in connection with this disease, showing that temperature exercises an agency of great activity in its production.

It is to an extent influenced by a high air temperature, this has been demonstrated conclusively by Dr. Ballard and other observers; and the summer rise in the diarrhœa death-rate commences only when the mean temperature of the soil has attained 56° F., as measured by a 4ft. soil thermometer. The high temperature in August and September of last year was no doubt the cause of the increase in the diarrhœa fatality here and in other parts of the country.

But in the production of diarrhœa, other than climatic influences must be taken into account. Both bad feeding and conditions of insanitation, existing so commonly in crowded town districts, favour the development of this specific intestinal affection.

For the mitigation of diarrhœa mortality, the removal of insanitary conditions and the provision of wholesome and healthy dwellings are essential preventive precautions, which sanitary authorities are expected to secure for those subject to their jurisdiction.

The subjoined Table gives the Number of Deaths in each year from the seven Principal Zymotic Diseases, and the Death Rates both Zymotic and General, for the years 1887 to 1899, and Annual Average for the decennial period 1889 to 1898.

	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897	1898	Average for 10 years 1889 to 1898
Small Pox	...	...	...	...	...	...	...	...	...	...	...	...	...
Measles	35	4	57	11	35	14	52	20	1	114	2	33	33·9
Scarlet Fever	38	22	15	4	1	2	3	5	4	4	41	15	9·4
Diphtheria	2	2	1	...	4	2	5	3	6	2	1	2	2·6
Whooping Cough ...	34	8	43	17	25	14	28	31	8	12	63	12	25·3
Typhoid Fever	7	7	4	1	5	5	5	6	7	1	7	4	4·5
Diarrhœa	62	32	55	61	36	21	62	19	67	35	50	71	47·7
Deaths from the seven Zymotic Diseases...	178	75	175	94	106	58	155	84	93	168	164	137	1·9
Deaths from other causes	847	888	887	986	1027	904	915	824	820	811	878	858	890
Totals for each year ...	1025	963	1062	1080	1133	962	1070	908	913	979	1042	995	1014
Death-rate from the Seven Zymotic Diseases per 1,000	3·1	1·2	2·9	1·5	1·7	0·9	2·4	1·3	1·4	2·5	2·4	2·0	1·9
Death-rate from all other causes ...	14·7	15·2	14·9	16·4	16·8	14.5	14·4	12·9	12·6	12·3	13·2	12·7	14·07
General death-rate ...	17·8	16·5	17·9	17·9	18·5	15·5	17·0	14·2	14·1	14·9	15·6	14·7	16·03

NOTIFICATION OF INFECTIOUS DISEASES.

The annexed table shows the number of notification certificates delivered to the Officer of Health in each week throughout the year 1898.

The aggregate record amounted to 861, against 980 in the preceding year, a diminution of 119.

WEEKLY NOTIFICATION OF INFECTIOUS DISEASES.

1898.	Small Pox.	Typhoid Fever.	Erysipelas	Puerperal Fever.	Diphtheria.	Scarlet Fever.	Croup.	Total.
Week ending January 7... ...	...	...	...	...	...	11	...	11
,, ,, 14.. ...	...	...	1	1	1	5	...	8
,, ,, 21... ...	...	...	...	...	2	5	...	7
,, ,, 28... ...	...	1	1	...	...	6	...	8
,, February 4... ...	...	1	...	...	...	8	...	9
,, ,, 11... ...	...	2	...	...	1	7	...	10
,, ,, 18... ..	...	...	1	...	...	4	...	5
,, ,, 25... ...	...	1	1	...	...	8	...	10
,, March 4.. ..	...	2	2	...	...	9	...	13
,, ,, 11... ...	...	1	...	1	..	4	...	6
,, ,, 18... ...	...	...	3	...	...	9	...	12
,, ,, 25... ...	...	...	1	...	...	6	1	8
,, April 1... ...	...	...	2	...	...	3	...	5
,, ,, 8... ...	...	1	...	...	...	3	...	4
,, ,, 15.. ..	...	2	...	...	...	4	...	6
,, ,, 22... ...	...	...	5	...	...	5	...	10
,, ,, 29... ...	...	...	...	...	...	7	...	7
,, May 6... ...	...	2	1	1	...	5	...	9
,, ,, 13	...	...	...	...	1	4	..	5
,, ,, 20... ...	...	...	1	...	1	4	...	6
,, ,, 27... ...	...	...	1	...	...	9	...	10
,, June 3... ...	...	1	3	...	...	7	...	11
,, ,, 10... ...	...	...	2	...	...	2	...	4
,, ,, 17... ...	...	...	...	...	...	3	...	3
,, ,, 24... ...	...	...	...	...	...	6	...	6
,, July 1... ...	...	1	2	...	...	5	...	8
,, ,, 8... ...	...	...	2	...	...	11	...	13
,, ,, 15... ...	...	...	1	...	1	12	...	14
,, ,, 22... ...	...	...	1	...	1	10	...	12
,, ,, 29... ...	...	...	1	...	...	10	...	11
,, August 5... ...	...	...	...	...	...	9	...	9
,, ,, 12	...	...	1	...	...	10	...	11
,, ,, 19	...	...	...	...	...	19	...	19
,, ,, 26... ...	...	2	1	...	...	20	1	24
,, September 2... ...	...	1	...	...	1	32	...	34
,, ,, 9... ...	...	2	...	...	...	31	...	33
,, ,, 16... ...	...	...	1	...	1	30	...	32
,, ,, 23	...	...	1	1	4	26	...	32
,, ,, 30... ...	...	2	...	...	1	34	...	37
,, October 7... ...	...	1	3	...	...	36	...	40
,, ,, 14... ...	...	2	1	...	...	46	...	49
,, ,, 21... ...	...	...	3	...	...	37	2	42
,, ,, 28... ...	...	1	4	...	...	39	...	44
,, November 4... ..	...	...	2	...	...	31	...	33
,, ,, 11... ...	...	...	2	...	1	31	...	34
,, ,, 18... ...	...	...	2	...	...	22	...	24
,, ,, 25... ...	...	3	1	...	...	9	...	13
,, December 2... ...	...	2	5	...	...	25	...	32
,, ,, 9... ...	...	1	3	...	...	14	...	18
,, ,, 16... ..	...	...	3	...	...	19	1	23
,, ,, 23	...	1	2	...	...	10	...	13
,, ,, 30	...	3	2	...	...	9	...	14
Total, 1898	...	36	69	4	16	731	5	861
Total, 1897	...	28	74	4	8	866	3	980

THE BOROUGH HOSPITAL.—The number of admissions last year amounted to 353, including 5 patients from Kingsthorpe Urban Sanitary District.

The cases treated in the Hospital in 1898 were:—

Disease.	Total.	Died.	Recovered.	Remaining under Treatment.
Scarlet Fever	322	8	260	54
Typhoid Fever	16	2	14	0
Diphtheria	4	1	3	0

The patients received into the Hospital in the two previous years 1896 and 1897 were 278 and 439 respectively.

The following table shows the number of patients received into the Hospital in each month during the years 1897 and 1898:—

	1898.	1897.
January	22	26
February	26	30
March	23	29
April	20	24
May	19	42
June	16	26
July	40	47
August	39	41
September	41	44
October	38	47
November	34	45
December	35	38
Total	353	439

The fatal cases of scarlet fever occurring in the Hospital numbered eight, but one of the deaths must be excluded, the child dying of hip disease several weeks after recovery from scarlet fever. The patient was under treatment in the Northampton Infirmary for the joint disease, and was attacked by scarlet fever when in that institution.

The deaths represent a scarlet fever death-rate of 2·1 per cent., this being about one-half the mortality rate from the same cause amongst Hospital patients in the preceding twelve months.

Relative to scarlet fever "return cases," or instances of the recurrence of the infection in houses within a period of a limit of three weeks, subsequent to the return of patients from the Hospital to their homes, we find an increase, though not very material, compared with 1897.

To the total admissions in 1898, the percentage of "return cases" was 4·5, against 3·2 in 1897.

In previous annual reports, I have endeavoured to explain that unfortunate incidents of this description are unavoidable, and from time to time occur, notwithstanding the observance of the strictest precautions. Those experienced in the administrative management of isolation hospitals appear to be unable to devise any effective remedy for obviating this recurrence of the infection of scarlet fever, which in many cases is entirely inexplicable.

The parents of all children who have been treated in the Borough Hospital are warned of this danger, and notified on a printed form, that it is advisable that every care should be taken to prevent children coming in contact with other children for a period of two or three weeks after their discharge from the Hospital.

The scarlet fever wards were occupied throughout the entire year, and in the autumn months were crowded to such extent that for a time patients had to be refused admission.

A continuation of the excessive prevalence of scarlet fever will in the future be attended by a similar experience, unless an extension of the Isolation Hospital is decided upon.

For the better accommodation of the nursing staff it was decided to enlarge the administrative block by the erection of additional bedrooms, and this improvement was effected at a cost of £200.

SANITARY ADMINISTRATION.—In reviewing the year's work of the health department, I have, in the first instance, again to advert to the deficiency of its official capacity, and I have to repeat that the services of two sanitary inspectors are incompetent to discharge with any degree of efficiency the numerous and complicated duties devolving on these officials. In a thickly-populated district as this, exposed to all those conditions connected with insanitation, the inevitable engenderment of urbanization, administrative laxity, or inactivity, is a policy that is too obviously retrogressive and opposed to the public interest. This is to be deprecated, as thereby the development of conditions that are inconsistent with health continue unrestrained, and unhealthfulness is provoked rather than healthfulness promoted.

The "betterment" of the public health is a fundamental principle in the conduct of municipal government, and in these days its omission is calculated only to arouse popular disfavour and discontent, entailing as it does the deprivation of the acknowledged beneficent results of sound and progressive sanitation. Northampton, and indeed all populous localities, require constant and systematic sanitary supervision for the detection and elimination of those disease producing conditions pervading crowded places. It is evident that anything approaching indifference in the observance of precautionary measures of this important character is disastrous to those subjected to baneful influences as those in question. This is a misfortune which sanitary reforms are designed to avert if possible.

The earnest desire of those interested in Northampton's welfare is that it should be both healthy and prosperous; but if its sanitary effectiveness is to be maintained, as it should be, adequate power must be available for its consummation.

I have no hesitation in saying that it is most desirable, in fact indispensable, that the staff of Sanitary Inspectors should be increased.

The account of the proceedings which have, by the authority of the Sanitary Committee, under the direction of the health department, been brought to a successful issue in the course of the past twelve months, will not, I apprehend, on investigation be found to compare unfavourably with the results achieved in past years. It may perhaps be observed that the amount of insanitary property dealt with under the Housing of the Working Classes Act is on a smaller scale than that of some preceding years; but the fact must not be disregarded that if this be so, a considerable number of dwellings of this class, found defective in sanitation, have been materially improved by the removal of the evils in existence.

The sanitary defects found to be in existence chiefly comprised dilapidations and filthiness, giving rise to a series of unwholesome and unhealthy conditions. Such houses were found in the following courts, alleys, and streets :—

Grey Friars' street, Military road, Cowper street, Court 3, Wellington street; Market street, Robert street, Campbell street, Kettering road, Spencer road, Groom's yard, Castle street, Brunswick street, Lawrence street, Regent street, Woodford street, Gladstone terrace, Vernon street, Victoria street, Bailiff street, Military road, Court 1, Regent square; St. Edmund's road, Court 1, Upper Mounts; Chapel place, East street, Kettering gardens, Cleveland road, Inkerman terrace, Ash street, Nelson street, Todd's lane, St. Andrew's road, St. Katharine's street, Bell Barn street, Clarke's yard, St. George's street, Johnson's row, Grafton street, Silver street, Horseshoe street, Spring Lane terrace, Alliston's gardens, Castle gardens, Swan street, Herbert street, Castle terrace, Semilong terrace, Lower Priory street, 15, King street; 13, St. Peter's street; Compton street; Francis street, Scarletwell street, Little Cross street, Russell terrace, St. Andrew's street, Gas street, Horsemarket, Mounts.

HOUSE-TO-HOUSE INSPECTION.—Systematic inspections were made of the houses included in the subjoined list, and all sanitary deficiencies found to be in existence were required to be amended:—

Grey Friars' street, Newland, Albert street, Court 1, Regent street; Courts 1 and 5, Upper Mounts; Kettering gardens, Scarletwell street, Horseshoe street, Bearward street, Lower Grafton street, Court 2, King-street; Silver street, Bell Barn court, Court 1, Bearward street; James' place, Court 1, Castle street; and others.

DRAIN TESTING.—Investigations were made by officials of the department for ascertaining the soundness or otherwise of drains in 65 houses, the smoke test being applied for this purpose, with the result that in 51 dwellings defects were detected and removed.

The houses so subjected were situated in the undermentioned localities:—St. Paul's road, Castilian terrace, Alfred place, Hazelwood road, Derngate, Bridge street, Adelaide terrace, Cliftonville, Cheyne walk, Hester street, St. Giles' street, St. Giles' square, Abington street, Sheep street, Alfred street, Lady's lane, Horsemarket, Bath street, Bristol street, St. Andrew's street, Priory street, Lower Grafton street, Compton street, Lower Harding street, Bath street, Bearward street, Lower Cross street, Silver street, Scarletwell street, Swan street, Harding terrace, Arundel street, Woolmonger street, Upper Harding street, Green street, Grafton street, Francis street, Oak street, Alexandra road, Portland street, Langham place, Prince's street, Park street, Victoria road, Bailiff street, Adnitt road, St. Michael's avenue, Oakley street, Newland, York road, St. Edmund street, St. George's place, Kerr street, Billing road, Abington square, Vernon terrace, St. Michael's avenue, Cloutsham street, Hood street, Adams avenue.

RECONSTRUCTION OF DRAINS.—In the houses comprised in the appended list the drainage imperfections were found to be of so grave a character as to require reconstruction:—

Lorne road, Nos. 55, 57.
Oak street, Nos. 20, 22, 24.
Wellingborough road, No. 73.
Cleveland road, Nos. 24, 26, 28.

Kerr street, Nos. 25, 27, 43.
Edith street, Nos. 60, 62.
Prince's street, No. 14.
Great Russell street, Nos. 54, 63.
Shakespeare road, No. 75.
Victoria road, Nos. 65, 67.
Somerset street, Nos. 45, 47, 49.
Kettering road, Nos. 17, 18, 19, 20, 21.
Duke street, No. 6.
Clare street, No. 76.
Kettering gardens, Nos. 8, 9, 10, 11, 12, 13, 14.
Cyril street, Nos. 41, 43, 45, 47, 49, 51.
Lawrence street, No. 17.
Oakley street, Nos. 25, 27.
Chapel place, Nos. 41, 42.
Grafton street, Nos. 32, 34, 36.
Newland, Nos. 20, 22.
St. Edmund's street, Nos. 55, 57, 59.
Peter street (yard).
Wellington street, Nos. 35, 37.
Spencer road, Nos. 41, 43, 45, 47.
Leicester street, Nos. 43, 45.
Brunswick street, Nos. 49, 51, 53, 55, 57.
Alfred street, Nos. 5, 6.
The Drapery, No. 3.
Langham place, Nos. 21, 23.
Union street, Nos. 3, 5.
Abington square, Nos. 2, 4, 6, 8, 10.
Nelson street, 3rd square, Nos. 1, 3, 5, 7, 9, 11, 13.
Bouverie street, Nos. 32, 34, 36, 38, 40.
Gray street, Nos. 33, 35.
Maple street, Nos. 24, 26.
Cloutsham street, Nos. 27, 29.
Derby road, Nos. 24, 26.
Wellingborough road, Nos. 58, 226.
Castilian street, No. 13.
Derngate, No. 34.
Albert place, Nos. 2, 3, 4, 5, 6, 7.
Royal Victoria Dispensary, Albion place.
Hazelwood road, the Nursing Institute.
Bridge street, No. 96, 110, 112.

George row.
The Parade, No. 14.
Hester street, No. 27.
Spencer House, Leicester road.
Sheep street, No. 64.
St. Andrew's terrace, No. 1.
Althorp street, No. 21.
Upper Thrift street, No. 26.
Billington street, Nos. 4, 5.
Swan street, Nos. 54, 61, 63, 65, 67, 69.
Scarletwell street, Nos. 57, 59, 61.
St. Andrew's street, No. 66.
Horsemarket, Nos. 77, 79, 81, 83, 85, 87, 89, 91.
St. Peter's street, No. 13.
Green street, Nos. 32, 34.
Woolmonger street, Nos. 53, 55, 57.
Newland, Nos. 20, 22.
Park street, No. 19.
Kemshed's yard, Angel lane.

OVERCROWDING.—In the course of the year the number of nuisances from this circumstance was insignificant. They were in all instances satisfactorily disposed of.

The houses found to be overcrowded were—38, Castle street, — Clarke's yard, St. George's street; 42, Exeter road, 24, Grafton street, 89, Scarletwell street, Court 1, Regent street.

INSANITARY HOUSES DEALT WITH UNDER THE HOUSING OF THE WORKING CLASSES ACT.

The work performed last year was less extensive than that in some previous years.

The representations I submitted with regard to insanitary premises consisted of the following :—

Bell Barn Court, Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12.

These houses are typical specimens of slums, being small two-roomed cottages, the cubical capacity of the living-room being 550 feet, and that of the bedroom 920 feet. The insanitary characteristics of these houses rendering them unfit for habitation, were :—

1. Insufficient space of rooms.
2. Dampness of site.

3. Inadequate ventilation, owing to the lack of proper provision for through æration.
4. Structural dilapidations, comprising decaying floors, walls, and ceilings, inducing dirt and other foul deposits, and causing atmospheric defilement and unwholesomeness of the entire dwellings.
5. Absence of suitable domestic offices, such as back kitchen or scullery for washing and cleansing purposes, and suitable provision for the storage of food.

In the course of an inspection of this property I ascertained that there were 32 human beings—21 adults and 11 children—inhabiting this grossly insanitary and insalubrious locality.

I am told that the weekly rent charged was two shillings for each cottage. This cannot be regarded as an extravagant sum, but disreputable places of this description really are dear at any price. The application for closing orders for these houses made to the magistrates was granted, and ere long we may anticipate that the court will be demolished.

Court 1, Bearward street, Nos. 1, 2, 3, 4, 5, 6.

These houses were reported to you as unfit for habitation.

The prevailing sanitary defects consisted of dampness, filthiness, and unwholesomeness, and inefficient ventilation, and insufficient light.

The surroundings of the court were also found unsatisfactory in a sanitary sense, the court-yard being badly paved, and the soil in the immediate neighbourhood of the dwellings was polluted and fouled, and the drains defectively trapped. The water closets, situated within a few feet of the houses, were in a neglected and foul state, and a source of nuisance.

I advised that measures should be adopted for the prompt closure and subsequent demolition of this very undesirable property.

The usual notices, by the direction of the Sanitary Authority, were served on the owners, who undertook to have them closed without delay.

Under these circumstances legal proceedings were not instituted.

Court 1, Wood street.

The six houses in this court were reported on in the latter part of 1897, and in the earlier part of the present year a closing order was granted by the magistrates, and they are now untenanted.

HOUSE DRAINS.—In my last annual report reference was made to the large number of houses existing in the town with outside water-closets, but minus proper means of flushing—being hand-flushed.

Hand-flushed closets always have been, and always will be nuisances, and every house should be regarded as being insanitary that has not a proper flushing apparatus attached to the water closet. The abolition of all such water closets in the town is a sanitary reform which ought to be insisted upon.

In the summer of last year a house-to-house disinfection and flushing of the drains throughout the town was carried out under the supervision of the health department by the sanction of the Council, acting on the recommendation of the Sanitary Committee.

The method of procedure being, that a packet of disinfecting powder was delivered at each house, with a leaflet containing instructions as to the use of the disinfectant.

There were 14,902 houses provided with the disinfectant.

The amount of carbolic powder used was about eight tons, the cost being £128.

The cost incurred in distribution being £13.

This precautionary proceeding was somewhat costly, but there can be no question as to its utility in its purifying effects both of the tributary and main drains. I may add, however, that all house drains should be so constructed as to be self-cleansing, and recourse to general flushing and disinfecting would under these circumstances be unnecessary.

OFFENSIVE TRADES.—Action was taken only with regard to one offensive business, namely "gut scraping," and by a resolution of the Town Council the proprietor was ordered to remove his business on the Houghton road, to a more suitable site to be approved by the Medical Officer of Health, and in default of so doing proceedings were to be taken against him for violating the statute in establishing this offensive trade without the written consent of the Sanitary Authority.

The period allowed for complying with the order of the Council was three months which has not yet elapsed.

SLAUGHTER=HOUSES and BAKE=HOUSES.—In the Urban Sanitary District, at this date, there are 75 registered slaughter-houses and 101 bake-houses.

The slaughter-houses and bakehouses in the town have been periodically inspected during the year, and steps taken for securing their preservation in a satisfactory sanitary condition.

COW SHEDS and MILK SHOPS.—There are 24 cow sheds and 202 milk shops recorded in the register, and 9 milk shops were added to the register in 1898.

These places were inspected, and any matters requiring amendment were enforced.

FOOD AND DRUGS ACT, 1875-9.

There were 41 samples analysed in 1898, 31 being certified as genuine and 10 adulterated.

Nature of Article.	Number of Samples.	Genuine.	Adulterated.
Milk	28	22	6
Butter	3	3	0
Coffee	1	1	0
Brandy	1	1	0
Whiskey	2	0	2
Gin	1	0	1
Sweet Spirits of Nitre......	2	1	1
Compound Tincture of Camphor	2	2	0
Tincture of Opium.........	1	1	0
	41	31	10

Legal proceedings were instituted against six offenders, with the result that the prosecutions in two instances, on technical grounds, were withdrawn, and in four cases convictions obtained, and fines (including costs) inflicted, amounting in the aggregate to £3 13s. 6d. I have but little doubt that the persons convicted of offences under this act will feel that they were leniently dealt with. From the fact that about 25 per cent. of the samples analysed last year were found adulterated, it cannot but otherwise be concluded that adulteration is extensively practised in Northampton. I believe it is admitted by those experienced in the operative results of the Food and Drugs Act, that the deterrent effects it was anticipated to bring about in the restriction of food adulteration have not been realised. The intention, however, of the Government to amend this act of parliament, with the object of increasing its efficiency will be generally recognised and approved as a step in the right direction.

FOOD PRESERVATIVES.—The attention of the town council was directed in a report I submitted last year to the practice (which in Northampton and elsewhere is a growing one), of the use of chemicals for the preservation of milk; but the entire question of the admixture of chemical substances with food stuffs is one requiring minute investigation.

My contention, whether right or wrong, is that the addition of any chemical or foreign substance to milk or other food stuffs constitutes adulteration, on the ground that the article containing these foreign ingredients is not of the nature, substance, and quality demanded, as it is required to be by the Food and Drugs Act when disposed of by the vendor.

The pretext that the added chemical or foreign substance is harmless in its action is no justification for adulteration, and should be rejected—first, for the reason that food so treated is impure; second, it has never yet been, or is it likely to be, experimentally demonstrated that the continuous use of any drug is unattended by injurious effects.

My own conviction is that boracic acid is a deleterious substance, and that its protracted use as a preservative is calculated to inflict more or less constitutional injury in the case of the larger proportion of persons daily consuming food so treated. The extensive "drugging" of so many varieties of food used by the people in every-day consumption should, if possible, be checked, and legislative interference ought to be exercised for suppressing what is really now becoming a national evil. This is really a species of sophistication imperilling the public safety, which must in due course be effectively counteracted.

INSPECTION OF FOOD.—A summary of the work performed by the health department during the year with regard to the seizure and condemnation of unwholesome food is appended. There is no doubt that no inconsiderable quantity of unwholesome meat is disposed of in the town, and the devices resorted to by traders for evading detection in this disreputable practice are too often successful, I am sorry to say. It is not the well-to-do, but the poorer classes who suffer. those who are from necessitous circumstances beguiled by low priced articles of food such as inferior meat; cheapness rather than wholesome qualities being the attracting feature in their case in the purchase of the necessaries of life.

The traffickers in diseased and unwholesome meat, should be denounced, and restrained in their nefarious pursuit. This class of persons are social offenders, whose tactics endanger the public health, and impede legitimate trading.

This is a mischievous proclivity that can and ought to be suppressed, the only effectual remedy being the abolition of private slaughtering establishments, and public abattoirs being substituted, and prohibiting by law the sale of the flesh of animals until its wholesome qualities and fitness for human food have been verified by competent inspectors. There can be no doubt that this is a reform that in the public interest should be inaugurated, and there is every prospect that in the no distant future, it will be put into operation; and I should say the sooner the better.

Articles of food condemned and destroyed:—

Sheep	2
Rabbits	28
Carcase of Beast	1—3 cwt.

Hams	44—4 cwt.
Herrings (fresh)	11 boxes—13 cwt.
,, ,,	2 kits.
,, (salt)	22 boxes—38 cwt.
,, ,,	6 barrels.
Codling	48 boxes.
Haddocks	73 boxes—18 cwt.
Colefish	13 boxes—15½ cwt.
Codfish	9 barrels.
,,	3 boxes—2 cwt.
Catfish	1 box.
Gurnet	1 barrel—2 cwt.
Shrimps	1 basket—10 galls.
Mackerel	1 box—1 cwt.

It is to be noted that a very considerable proportion of the condemned articles of food enumerated in this list was voluntarily surrendered.

In no case during the year was it deemed expedient to take legal proceedings against offenders.

WORKSHOPS AND FACTORIES.

The summary of the work performed by the department last year in connection with the sanitation of factories and workshops is here given.

Nothing of an unusual character transpired in relation to workshops and factories requiring special comment.

In two or three instances, in the case of factories, the action taken by the Sanitary Authority was at the instigation of the authorities at the Home Office. My official knowledge enables me to say that both the proprietors of factories and workshops invariably do not demur in compliance with the requirements of the Sanitary Authority for amending and improving the sanitary condition of the manufactories.

For insuring the due observance of the acts of parliament these places require to be visited periodically by the sanitary officers, and the official returns for the year indicate that this branch of sanitation received due attention at the hands of the department.

Factories and Workshops Act.

NATURE OF NUISANCE.	Notices served.	Nuisances abated.	Notices on books Dec. 31, 1898.
Overcrowding	6	6	0
Insufficient closet accommodation	3	3	0
Absence of closet accommodation	1	1	0
Want of separate closet accommodation for sexes	0	0	0
Closets requiring flushing apparatus	56	37	19
Offensive closets, drains, etc.	36	34	2
Offensive accumulations	6	6	0
Insufficient ventilation	4	2	2
Filthy or dilapidated workshops ordered to be cleansed and repaired	92	91	1
Workshops without supply of drinking water ...	1	1	0
Forms shewing cubical measurements not affixed...	80	80	0
Total	285	261	24

NEW BUILDINGS.

The following information relating to the building operations that were carried out last year, under the supervision of the Engineer's department, has been kindly supplied me by Mr. W. D. Gibbins, the Borough Engineer.

The plans for new buildings examined and passed by the Borough Engineer were :—

New Houses.	Factories.	Workshops.	Warehouse.
226	3	5	1

Other Buildings, 4.

Alterations and Additions to existing Buildings, 62.

Summary of Routine Work carried out by the Health Department during the year 1898.

Nuisances reported by Sanitary Inspectors	1612
Nuisances reported at the office by residents	202
Nuisances abated	1535
Preliminary notices served	700
Statutory notices served for the abatement of nuisances	554
Inspection of houses after complaint of nuisance	395
Visits to houses in which infectious illness existed	1170
Inspection of courts and alleys	219
Houses disinfected	573
Drains tested with asphyxiator	98
Drains tested with water	82
Drains found defective after testing	79
Drains reported choked, and subsequently disinfected and amended	130
Drains reconstructed	154
Drains repaired	679
Bath, lavatory, sink, waste pipes disconnected from drains and altered so as to discharge over gulley traps	56
New pans fixed to closets	46
Cesspools abolished and drainage constructed in connection with sewer	1
Indoor soil pipes abolished, and new ones fixed outside	20
Closets supplied with flushing apparatus	34
Houses cleansed and whitewashed	134
Accumulation of manure and offensive refuse removed	40
Animals that were kept so as to be a nuisance removed	34
Overcrowding in houses abated	7
Water closets, urinals, cleansed and disinfected	162
Urinals reconstructed	10
Urinals abolished	5
Polluted wells closed	0
Slaughter-houses, bake-houses, cow-sheds inspected and found defective in sanitation	77
Dilapidated houses repaired	51
Houses unfit for habitation	18
Yard pavings re-layed and repaired	17
Spoutings repaired and renewed	14

Drinking water disconnected from closet cistern and connected to town service	2
Workshops and factories inspected and found defective in sanitation	206
Prosecutions	5
Premises without a proper supply of water	3

SEWERS.—Foul smelling sewers being atmospheric contaminators are unquestionably nuisances, and are conditions that must be regarded to an extent as being more or less unhealthy.

The officials of the Sanitary Department are perpetually receiving complaints, which are, generally speaking, well founded, of this description of public nuisance. No remedy of course can be devised for foulness existing in sewers whose construction is faulty, but I do not for a moment suppose that it will be suggested that all sewers in Northampton are of imperfect construction, and yet they are foul and still they are offensive. Culverts that are ventilated on the system that has been adopted here, must be to a degree offensive, but the nuisance so caused should be reduced to a minimum.

The Northampton sewers, some of them beyond doubt, in the opinion of experts, need reconstruction; but points in connection with these channels, to which attention should be particularly directed, are not those relating to structural defects, but details of less magnitude connected with flushing, scavenging, cleansing, and ventilation.

So far as I am competent to judge, the system of scavenging and flushing the sewers in Northampton, is totally ineffective in the removal of the prevailing foulness.

If any alterations can be suggested, and carried out, for successfully dealing with "sewer nuisances," it will be a public benefit and I feel confident will be duly appreciated.

I have on previous occasions adverted to the desirability of removing the sewer ventilators in the streets in narrow thoroughfares, and their replacement where practicable of ventilating shafts, and I would again urge the expediency of this procedure.

DISINFECTING STATION.—The number of articles disinfected at the public disinfecting station was considerable, the total, however, being less than that of the preceding year.

The new steam disinfector (Washington Lyons) erected last year has now been in working order several months, and there is every reason for saying that the machine in its operation is satisfactory in all respects.

The cost of the appliance was £362, not including the alterations which were needful at the station, for which unfortunately the expenditure was considerable.

The number of articles disinfected in each month of the year 1898 was :—

	Number of Articles.
January	673
February	671
March	522
April	220
May	379
June	290
July	360
August	452
September	470
October	906
November	1220
December	731
	6894

PROSECUTIONS.—Offenders under the public health and allied acts of parliament, were proceeded against by the Sanitary Authority in three instances only ; two being cow-keepers who were summoned before the magistrates for the non-compliance with the dairies, cowsheds, and milk shops order.

They were required to pay the costs of the proceedings, and directed by the Court to forthwith comply with the orders of the Sanitary Authority.

The third case was instituted for the purpose of procuring a closing order for the houses in Court 1, Wood street, which were reported to the Council at the latter end of last year as being in an insanitary state and unfit for habitation.

THE WATER SUPPLY.—The Town Council is well aware of the fact that the Ravensthorpe Watershed is not free from contaminating sources, and having so repeatedly directed attention to this subject, I am constrained to express my regret that the improvements which are so essential for the protection of the watershed from pollution have not been effected, and for the most part, the evils which have been so long in existence, continue unabated. This is a question of extreme importance, and I can only urge that no efforts should be spared for ensuring its effectual and satisfactory disposal.

NORTHAMPTON URBAN SANITARY DISTRICT.

Deaths Registered from all Causes during the Year 1898.

NOTE.—The deaths of Non-Residents occurring in Public Institutions situated in the District are excluded, and the Deaths of Residents occurring in Public Institutions situated beyond the limits of the District are included.

DISEASES.	AGES.											TOTALS.
	0 to 1.	1 to 5	5 to 15	15 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 to 75	75 to 85	85 and upwards	
I. Specific Febrile or Zymotic Diseases	83	44	10	2	4	4	2	4	6	4	1	164
II. Parasitic Diseases	3	1	...	...	...	...	...	...	...	...	...	4
III. Dietic Diseases	...	...	...	...	...	1	...	...	...	...	...	1
IV. Constitutional Diseases ...	21	14	8	19	36	22	21	27	14	...	...	182
V. Developmental Diseases ...	56	...	...	...	...	...	...	...	16	36	17	125
VI. Local Diseases	60	48	9	11	24	34	40	64	78	29	4	401
VII. Deaths from Violence	3	1	...	2	4	2	6	3	3	2	...	26
VIII. Deaths from Ill-Defined and not Specified Causes	81	2	...	1	...	...	...	3	3	2	...	92
TOTALS	307	110	27	35	68	63	69	101	120	73	22	995
I.—Specific Febrile or Zymotic Diseases.												
1.—MIASMATIC DISEASES.												
Measles	15	18	...	...	...	...	...	...	...	...	...	33
Scarlet Fever	...	8	7	...	...	...	...	...	...	...	...	15
Whooping Cough	10	2	...	...	...	...	...	...	...	...	...	12
Diphtheria	...	...	2	...	...	..	...	...	...	...	...	2
Enteric or Typhoid Fever	...	...	...	1	3	...	...	...	...	...	...	4
Other Miasmatic Diseases and Influenza	3	2	1	1	...	2	1	4	5	2	1	22
2.—DIARRHŒAL DISEASES.												
Diarrhœa, Dysentery	55	12	...	...	1	1	...	...	...	2	...	71
5.—VENEREAL DISEASES.												
Syphilis	...	1	...	...	...	...	1	...	..	...	...	2
6.—SEPTIC DISEASES.												
Erysipelas	...	1	...	...	...	...	...	...	1	...	...	2
Pyæmia, Septicæmia	...	...	...	...	...	1	...	...	...	...	...	1
II.—Parasitic Diseases.												
Thrush, and other Vegetable Parasitic Diseases	3	1	...	...	...	...	...	...	...	...	...	4
III.—Dietic Diseases.												
Delirium Tremens	...	...	...	...	...	1	...	...	...	...	...	1
IV.—Constitutional Diseases.												
Rheumatic Fever, Rhuematism of the Heart	...	...	...	1	1	...	1	...	...	...	...	3
Rickets	...	2	...	...	...	...	...	...	...	..	..	2
Cancer, Malignant Disease	...	...	...	...	1	3	5	9	14	...	...	32
Tabes Mesenterica	4	2	...	...	..	..	...	...	..	...	...	6
Tubercular Meningitis, Hydrocephalus	3	4	1	...	..	...	...	...	...	...	...	8
Phthisis	6	4	6	17	33	17	14	18	...	...	...	115
Other forms of Tuberculosis, Scrofula	8	2	1	...	1	1	1	...	...	.	...	14
Purpura, Hæmorrhagic Diathesis ...	...	...	...	1	...	...	...	...	...	...	...	1
Glycosuria, Diabetes Mellitus	...	...	...	...	...	1	...	..	...	...	...	1
V.—Developmental Diseases.												
Premature Birth	47	...	...	...	...	...	...	...	...	...	...	47
Atelectasis	6	...	...	...	...	...	...	...	...	...	...	6
Congenital Malformations	3	...	...	...	...	...	...	...	...	...	...	3
Old age	...	...	...	...	...	...	...	...	16	36	17	69

DISEASES.	AGES.											TOTALS.
	0 to 1	1 to 5	5 to 15	15 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 to 75	75 to 85	85 and upwards	
VI.—Local Diseases.												
1.—DISEASES OF NERVOUS SYSTEM.												
Inflammation of Brain or Membranes...	2	5	3	1	2	1	...	..	...	.	...	14
Apoplexy, Softening of Brain, Hemiplegia, Brain Paralysis...	...	...	...	...	2	5	5	13	15	10	1	51
Insanity, General Paralysis of the Insane	...	...	...	...	...	...	...	1	...	..	...	1
Epilepsy	...	...	...	1	2	2	1	...	...	1	...	7
Convulsions	21	6	...	...	...	...	...	...	...	..	...	27
Laryngismus Stridulus (Spasm of Glottis)	1	...	...	...	...	...	...	...	...	...	...	1
Disease of Spinal Cord, Paraplegia, Paralysis Agitans	...	...	...	1	...	...	1	...	...	...	...	2
Other Diseases of Nervous System ...	1	...	...	...	...	1	2	...	3	..	...	7
3.—DISEASES OF CIRCULATORY SYSTEM.												
Acute Endocarditis	...	2	...	...	...	...	...	...	...	...	...	2
Valvular Diseases of Heart	...	...	1	1	1	1	2	1	...	2	...	9
Other Diseases of Heart	1	1	2	3	6	6	11	13	14	6	1	64
Aneurism	...	...	...	...	1	...	1	1	1	...	...	4
Embolism, Thrombosis	...	...	...	...	...	...	...	1	...	...	...	1
Other Diseases of Blood Vessels ...	...	...	...	...	...	1	...	...	...	...	...	1
4.—DISEASES OF RESPIRATORY SYSTEM.												
Laryngitis	...	...	1	...	...	...	...	...	1	...	...	2
Croup	1	7	...	...	...	...	...	...	...	...	...	8
Emphysema, Asthma	...	...	...	...	...	...	2	1	1	...	...	4
Bronchitis	14	11	...	...	...	...	5	8	26	6	1	71
Pneumonia	12	14	2	2	3	5	2	7	7	2	...	56
5.—DISEASES OF DIGESTIVE SYSTEM.												
Sore Throat, Quinsy	...	...	...	...	...	...	...	...	...	1	...	1
Diseases of Stomach	2	...	...	...	...	1	..	1	1	...	...	5
Enteritis	1	2	...	...	...	1	...	1	...	...	...	5
Obstructive Diseases of Intestine ...	1	...	...	...	...	1	...	4	3	...	...	9
Peritonitis	...	...	...	1	1	...	1	1	1	...	...	5
Cirrhosis of Liver	...	...	...	...	1	...	2	3	1	...	...	7
Jaundice and other Diseases of Liver...	...	...	...	...	...	...	2	1	1	...	1	5
Other Diseases of Digestive System ...	1	...	...	...	...	...	...	...	...	...	...	1
7.—DISEASES OF GLAND-LIKE ORGANS OF UNCERTAIN USE.												
(*e.g.*, Bronchocele, Addison's Disease)...	...	...	...	...	1	1	1	...	...	...	...	3
8.—DISEASES OF URINARY SYSTEM.												
Nephritis	...	...	...	...	1	3	1	1	...	...	...	6
Bright's Disease, Albuminuria	...	...	...	...	...	2	1	2	...	...	...	5
Disease of Bladder or of Prostate ...	...	...	...	...	...	...	...	1	...	1	...	2
9.—DISEASES OF REPRODUCTIVE SYSTEM												
A. *Of Organs of Generation.*												
Male Organs	...	...	...	...	...	...	...	...	1	...	...	1
Female Organs	...	..	...	...	...	...	...	...	1	...	...	1
B. *Of Parturition.*												
Abortion, Miscarriage	...	...	...	...	1	...	...	...	...	...	...	1
Puerperal Convulsions	...	...	...	...	1	1	...	..	...	...	...	2
Other Accidents of Child Birth ...	...	...	...	...	1	2	...	...	...	...	...	3
10.—DISEASES OF BONES AND JOINTS.												
Caries, Necrosis	1	...	...	...	...	...	...	...	...	...	...	1
Arthritis, Ostitis, Periostitis	...	...	...	...	...	...	...	1	1	...	...	2
11.—DISEASE OF INTEGUMENTARY SYSTEM.												
Other Diseases of Integumentary System	1	...	...	1	...	...	...	2	...	...	...	4

DISEASES.	AGES.											Totals
	0 to 1	1 to 5	5 to 15	15 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 to 75	75 to 85	85 and upwards	
VII.—Deaths from Violence.												
1.—Accident or Negligence.												
Fractures and Contusions	...	...	...	1	...	...	1	...	...	...	...	2
Burn, Scald	1	1	...	...	...	...	...	...	1	1	...	4
Otherwise...	2	...	...	...	1	...	4	1	1	1	...	10
2.—Homicide.												
Manslaughter	...	...	...	1	...	...	...	...	...	...	...	1
3.—Suicide.												
Poison	...	...	...	...	...	1	...	...	...	...	...	1
Drowning...	...	...	...	...	1	...	...	...	...	..	...	1
Otherwise...	...	...	...	...	2	1	1	2	1	...	...	7
VIII.—Deaths from Ill-defined and not Specified Causes.												
Dropsy	...	...	...	...	...	...	...	1	...	...	...	1
Debility, Atrophy, Inanition	70	2	..	...	...	...	...	...	...	..	...	72
Mortification	...	...	...	...	...	...	...	1	3	1	...	5
Abscess	...	...	...	1	...	...	...	1	...	...	...	2
Causes not Specified or Ill-defined ...	11	...	...	...	...	...	...	...	...	1	...	12

SUMMARY OF TABLE III.

	No. of Deaths.
I.—Specific Febrile, or Zymotic Diseases	
1. Miasmatic Diseases	88
2. Diarrhœal "	71
5. Venereal "	2
6. Septic "	3
II.—Parasitic Diseases	4
III.—Dietic Diseases	1
IV.—Constitutional Diseases ...	182
V.—Developmental Diseases ...	125
VI.—Local Diseases—	
1. Diseases of Nervous System ...	110
3. Diseases of Circulatory System	81
4. Diseases of Respiratory System	141
5. Diseases of Digestive System...	38
Carried forward	846

	No. of Deaths.
Brought forward	846
VI.—Local Diseases (Continued)—	
7. Diseases of Gland-like Organs of Uncertain Use	3
8. Diseases of Urinary System ...	13
9. Diseases of Reproductive System	
(*a*). Diseases of Organs of Generation	2
(*b*). Diseases of Parturition	6
10. Diseases of Bones and Joints...	3
11. Diseases of Integumentary System	4
VII.—Violence—	
1. Accident or Negligence... ...	16
2. Homicide	1
3. Suicide	9
VIII.—Ill-defined and not Specified Causes	92
Total	995

LOCAL GOVERNMENT BOARD FORM.

(A) TABLE OF DEATHS during the year 1898, in the Northampton Urban Sanitary District, classified according to Diseases, Ages, and Localities.

Names of Localities adopted for the purpose of these statistics; public institutions being shown as separate localities. (See note 4 on back of sheet.) (Columns for Population & Births are in Table B.)	Mortality from all causes, at subjoined ages.								Mortality from subjoined causes distinguishing Deaths of Children under Five Years of Age.																					
													Fevers.																	
	At all ages.	Under 1 year	1 and under 5	5 and under 15	15 and under 25	25 and under 65	65 and upwards		Smallpox	Scarlatina	Diphtheria	Membranous Croup	Typhus	Enteric or Typhoid	Continued	Relapsing	Puerperal	Cholera	Erysipelas	Measles	Whooping Cough	Diarrhœa & Dysentery	Rheumatic Fever	Phthisis	Bronchitis, Pneumonia, and Pleurisy	Heart Disease		Injuries	All other Diseases	Total
(a)	b	c	d	e	f	g	h	i	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Northampton County Borough	906	303	106	24	29	260	184	Under 5	...	8	...	...	...	...	...	...	...	...	1	14	12	67	...	...	51	4	...	2	250	409
								5 upwds.	...	6	2	...	...	4	...	...	...	...	1	18	...	4	3	102	70	63	...	...	224	497
Northampton Infirmary...	37	1	2	1	3	22	8	Under 5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	1	3
								5 upwds.	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	5	...	5	...	6	17	34
Northampton Workhouse	50	3	1	2	3	18	23	Under 5	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	3	4
								5 upwds.	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	8	5	4	...	...	29	46
St. Andrew's Hospital (Insane)	2	...	...	...	...	1	1	Under 5	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...
								5 upwds.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	2
Totals	995	307	109	27	35	301	216	Under 5	...	8	...	...	...	...	...	...	...	...	1	15	12	67	...	...	51	4	...	4	254	416
								5 upwds.	...	7	2	...	...	4	...	...	...	...	1	18	...	4	3	115	76	72	...	6	271	579

The subjoined numbers have also to be taken into account in judging of the above records of mortality. See notes on back.

Deaths occurring outside the district among persons belonging thereto.	...	...	3	5	...	...	...	Under 5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
								5 upwds.	...	7	...	...	...	1	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	8
Deaths occurring within the district among persons not belonging thereto.	90	1	7	5	9	40	28	Under 5	...	...	1	...	...	...	...	...	...	...	...	1	...	2	...	...	...	...	...	...	4	8
								5 upwds.	...	1	...	...	...	2	...	...	...	...	...	...	...	...	...	8	5	6	...	13	47	32

NOTES ON TABLES A AND B.

NOTE 1. *Medical Officers of Health of "Combined Districts" must make a separate Return for the District of each District Council.*

2. *Medical Officers of Health acting for a portion only of the District of a District Council should write, in the heading of the Table, the designation of the Division for which they act.*

3. *The words "Urban," "Rural," or "Metropolitan" must be inserted in the appropriate space in the heading, according as the District is Urban or Rural, or is within the Metropolitan Area.*

4. The "*Localities*" adopted for the purpose of these statistics should be areas of known population, such as parishes, groups of parishes, townships, or wards.

As stated at the head of the first column in each Table, *Public Institutions* should be regarded as separate localities, and the deaths in them should be separately recorded. Workhouses, Hospitals, Infirmaries, Asylums, and other establishments into which numbers of people, and especially of sick people, are received are Public Institutions for the purpose of these statistics.

5. *The deaths which have to be classified in this Table* (A), and summed up in the horizontal line of "Totals," are the whole of those *registered* as having actually occurred in the several localities comprised within the Division or District. But the registered number of deaths frequently requires correction before it can give an exact view of the mortality of a Division or District; and the two lowest horizontal lines are provided for the purpose of enabling Medical Officers of Health to indicate, to the best of their ability, what the extent of such corrections should be. Details concerning the corrective figures, *e.g.*, the institutions that have been considered, or the particular localities to which corrections apply, may appear in the text of the Report or in supplementary Tables.

Area and Population of the District or Division to which this Return relates.

Area in Acres		1,520
Population (Last Census)		61,016
,,	(estimated to middle of 1898)	67,414
Death Rates.	General, 14·7	per 1,000 Population, estimated to the middle of 1898.
	Infant (under 1 year of age) 181·2	per 1,000 Births Registered.

In recording the facts under the various headings of Tables A and B, attention has been given to the notes endorsed on the Table.

LEE F. COGAN,

February 17th, 1899.

MEDICAL OFFICER OF HEALTH.

(B) TABLE OF POPULATION, BIRTHS, and of NEW CASES of INFECTIOUS SICKNESS, coming to the knowledge of the Medical Officer of Health, during the year 1898 in the Northampton Urban Sanitary District, classified according to Diseases, Ages, and Localities.

NAMES OF LOCALITIES adopted for the purpose of these statistics; public institutions being shown as separate localities (*See Note 2 on back of sheet.*)	POPULATION AT ALL AGES.		Registered Births	Aged	NEW CASES OF SICKNESS in each Locality coming to the knowledge of the Medical Officer of Health.													NUMBER OF SUCH CASES removed from their homes in the several localities for treatment in Isolation Hospital.												
	CENSUS, 1891	Estimated to middle of 1897		under 5 or over 5	Smallpox	Scarlatina	Diphtheria	Membranous Croup	Fevers.					Cholera	Erysipelas			Smallpox	Scarlatina	Diphtheria	Membranous Croup	Fevers.					Cholera	Erysipelas	Measles	
									Typhus	Enteric or Typhoid	Continued	Relapsing	Puerperal									Typhus	Enteric or Typhoid	Continued	Relapsing	Puerperal				
(*a*)	*b*	*c*	*d*	*e*	1	2	3	4	5	6	7	8	9	10	11	12	13	1	2	3	4	5	6	7	8	9	10	11	12	13
Northampton County Borough	61,016	67,414	1694	Under 5	...	191	5	4	...	4	...	...	...	...	2	...	...	...	72	1	...	...	...							
				5 upwds.	...	520	8	1	..	27	...	...	3	...	64	...	...	...	245	3	...	...	16							
Northampton Infirmary	...	...	...	Under 5	...	7	1	..	...	...	...	...	...	...	...															
				5 upwds.	...	13	2	...	...	5	...	...	1	...	...															
Northampton Workhouse	...	...	...	Under 5	...	...	...	...	...	...	...	...	...	...	..															
				5 upwds.	...	...	...	...	...	...	...	...	...	...	3															
TOTALS	61,016	67,414	1694	Under 5	...	198	6	4	...	4	...	...	..	...	2	...	...	...	72	1	...	...	...							
				5 upwds.	...	533	10	1	...	32	...	...	4	...	67	...	...	...	245	3	...	...	16							

State here whether "Notification of Infectious Disease" is compulsory in the District. Yes.—Since when? December, 1889. Besides the above-mentioned Diseases, insert in the columns with blank headings the names of any that are notifiable in the district, and fill the columns accordingly. State here the name of the Isolation Hospital used by the sick of the District. Mark (H) the Locality in which such Hospital is situated; and if not within the District, state where it is situated. Northampton Borough Hospital, Kingsthorpe, about two miles from Northampton.

NOTES ON TABLE B.

(*See also Notes on back of Table A.*)

NOTE 1. The present *Table B* is concerned with population, births, and sickness (not with mortality) in the District or Division to which the Table relates.

2. As stated in the heading of Col. (*a*), *Public Institutions* should be regarded as separate localities, and the new cases of sickness in them should be separately recorded. Workhouses, Hospitals, Infirmaries, Asylums, and other establishments into which numbers of people, and especially of sick people, are received, are Public Institutions for the purpose of these statistics.

3. *Comments on any unequal incidence of notifiable disease upon the several localities, and considerations as to the local incidence of Consumption and other prevalent diseases, should be made in the text of the Report.*